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New reports of macromycetes from Mexico

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Abstract — Two species of macromycetes, *Phellodon tomentosus* and *Pulvinula constellatio,* are reported by first time for the Mexican mycobiota. The studied materials were collected from the state of Jalisco in pine-oak forest.

Key words — *Ascomycota*, *Basidiomycota*, taxonomy

Introduction

The present work contributes records of two genera poorly known from Mexico. *Pulvinula* Boud. *(Pyronemataceae, Ascomycota)* has not previously been reported from the Mexican mycobiota (Medel & Guzman 1999, Medel 2007), and only four species of *Phellodon* P. Karst. (*Bankeraceae, Basidiomycota*) have been reported from Mexico: *Phellodon alboniger* (Peck) Banker, *P. confluens* (Pers.) Pouzar, *P. melaleucus* (Sw. ex-Fr.) P. Karst., and *P. niger* (Fr.) P. Karst. (Cifuentes 1999).

Materials & methods

Specimens were collected from a pine–oak forest in the Mexican state of Jalisco, and deposited at the herbarium of the Institute of Botany of the University of Guadalajara, Mexico (IBUG). Macro- and micro-morphological descriptions and drawings were made of the studied materials. Photographs of fruiting bodies are provided for each taxon. Microscopic sections were mounted in a 3% KOH aqueous solution and Melzer's reagent. Specimens were identified after consulting Cifuentes (1999), Dennis (1970, 1978), Maas-Geesteranus (1975), Hall & Stuntz (1971), and Stalpers (1993).

Species descriptions

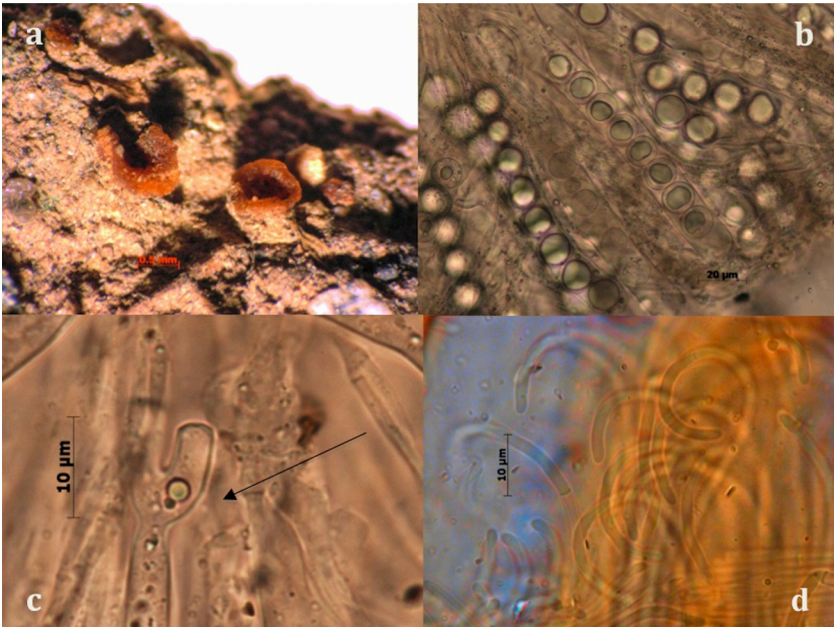

Plate 1. *Pulvinula constellatio* (Rodríguez 2359): a) discoid ascomata, b) asci with globose ascospores, c) ascal crozier, d) septate paraphyses with curved hyaline tips.

Pulvinula constellatio (Berk. & Broome) Boud., Hist. Classific. Discomyc. Europe: 70. 1907. Plate 1

Apothecia 1–5 mm diam., discoid, reddish orange and lighter orange pink towards the center, surface glabrous, margin finely wavy. Ascospores 13–15(–16) µm, globose uniseriate in the ascus, hyaline with numerous drops. Asci 216–246 × 13–14 µm, cylindrical with bifurcate base formed by a crozier, hyaline. Paraphyses 2 µm diam., filiform, slender with curved apex, forked, septate with numerous yellowish drops.

Specimen studied — **MEXICO. Jalisco**: Municipality of Zapopan, El Valle de las Tortugas, La Primavera, 17 Oct 2000, O. Rodríguez 2359 (IBUG).

Habitat — On ground, gregarious, in pine-oak.

Comments — Our material matches the description by Breitenbach & Kränzlin (1984) in ascospore morphology (13–17 µm diam., globose, with one or several drops) and the bifurcating paraphyses with curved apices. Dennis (1978) also described 13–15 µm diam. ascospores and curved branched paraphyses. Our specimen, however, had septate paraphyses whereas no septa were noted by those authors.

According to Dennis (1978), the distinctive forked ascal base of *Pulvinula constellatio* is also found in *P. cinnabarina* (Fuckel) Boud., which differs by its larger ascospores (≤18 µm diam.) and asci (≤320 µm long). Lantieri (2008) described *P. cinnabarina* with ascospores of 15-16.5 µm diam. and asci of 250 × 17-18 µm.

Pulvinula differs from *Lamprospora* by its more pulvinate ascoma and its slender and much forked non-clavate paraphyses with curved apices (Dennis 1978).

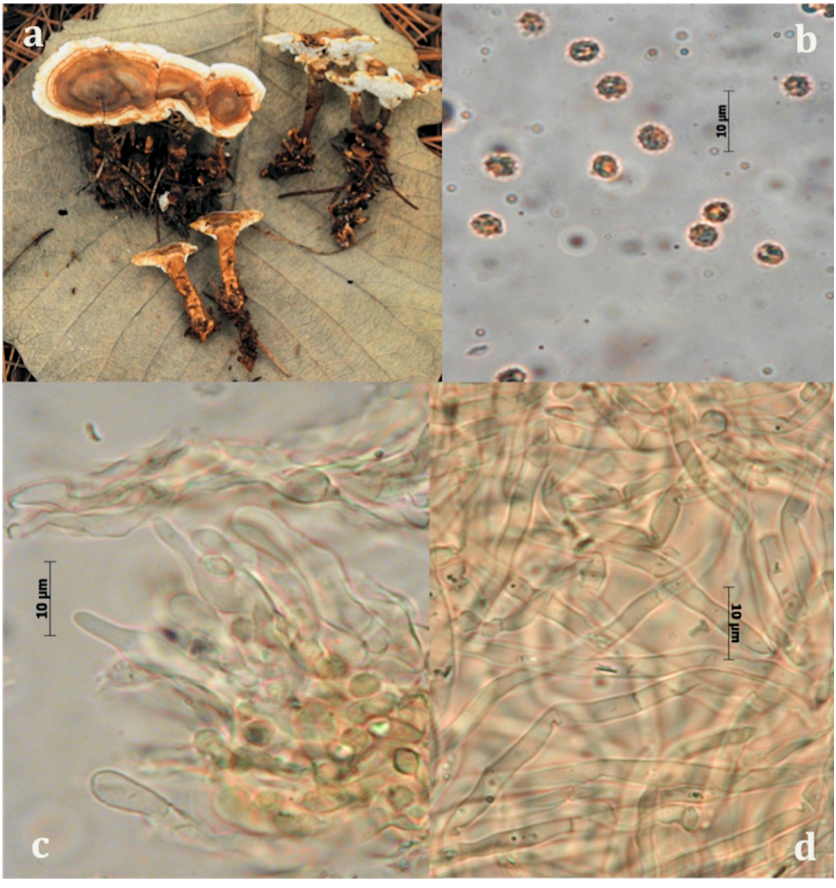

Plate 2. *Phellodon tomentosus* (Herrera 1260): a) basidiomes, b) subglobose echinulate (spiny) basidiospores, c) lageniform hyaline cheilocystidia, d) generative hyphae.

Phellodon tomentosus (L.) Banker, Mem. Torrey Bot. Club 12: 171. 1906. Plate 2

Pileus 20–35 mm diam., zonate, velutine to tomentose, more conspicuous towards the center, with the margin white to whitish-yellowish and the disc

orange-brown to reddish-brown and dark brown. Hymenophore toothed or with spines, whitish to cream coloured, with gray-pink tones in dried material. Stipe central to eccentric, surface also zonate and concolorous with the pileus but obscured in the base by a reddish-brown colour. Context zonate, reddish-brown, woody, odor agreeable, nut-like.

Basidiospores 3–4.5 × 3-4 µm, subglobose, echinulate, hyaline. Cheilocystidia 29–37 × 4–6 µm, lageniform, thin-walled, the majority with a long neck and some flexuose, hyaline, abundant, with basal septa and clamp connections absent. Hyphal system monomitic with generative hyphae 1.5–4 µm diameter, light yellowish coffee colour, and without clamp connections.

Specimen studied — **MEXICO**. **Jalisco**: Municipality of San Sebastián del Oeste, Camino Real Alto – La Bufa, 5.5 km del pueblo de San Sebastián del Oeste, 1 Aug 2009, M. Herrera 1260 (IBUG).

Habitat — On soil and needle litter, gregarious, in pine-oak.

Comments — *Phellodon tomentosus* is characterized by circular stipitate basidiomes that form into small colonies of five or six specimens with fused pilei, each pileus having its own independent stipe. Although cheilocystidia have not previously been reported for *Phellodon* species (Maas-Geesteranus 1975, Pegler et. al. 1997, Stalpers 1993), we observed cheilocystidia over the entire hymenial surfaces of our material.

The macro- and micro-morphological features agree with those described by Breitenbach & Kränzlin (1986). *Phellodon tomentosus* can be confused with some *Hydnellum* species based on context and stipe zonation, but *Hydnellum* can be differentiated microscopically by its brown spores.

Phellodon tomentosus is a widely distributed but uncommon species; it is reported as mycorrhizal on conifers (Pegler et al. 1997) and in mixed forests (Maas-Geesteranus 1975).

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